

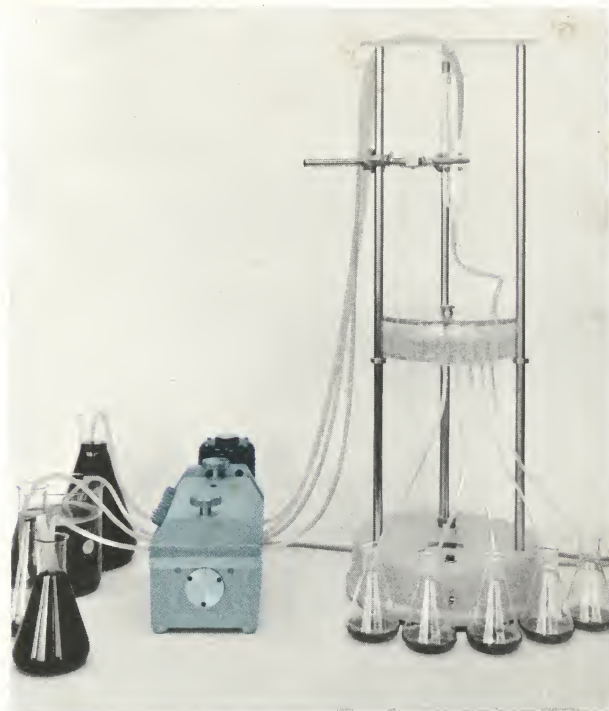
ORDER TODAY

Durum Dial-A-Pump. Model 12AP: including 12 liquid channels with separate flow control for each channel, initial supply of tubing and fittings, and instruction manual \$495.00

Terms and Delivery: f.o.b. Palo Alto, California; ½% 10 days, net 30 days; shipping weight 22 lbs.; shipped air freight or REA collect unless otherwise specified on purchase order; shipment two to four weeks after receipt of order



DURUM INSTRUMENT CORPORATION • 925 East Meadow Drive • Palo Alto, California 94303 • Telephone: (415) 321-6302



DURUM DIAL-A-PUMP (Model 12AP)

Convenient Features

- 12 individual channels; use from 1 to 12
- Individual flow control for each channel
- Continuously variable flow rates from 1 to 1,200 ml per channel (higher rates by combining channels)
- Compact: measures only 12½" L, 5½" W, 7" H
- Net weight only 16 lbs.
- Can be battery operated for outside operations

DURRUM INSTRUMENT CORPORATION
925 East Meadow Drive
Palo Alto, California 94303

NEW APPLICATIONS FOR DURRUM DIAL-A-PUMP™



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PALO ALTO, CALIF.
Permit #35

Mr. T. Nelson
Systems Consultant
P.O. Box 32
Schooleys Mountain, N.J.
07870

NEW TUBING FORMULATIONS BROADEN "DIAL-A-PUMP" CAPABILITY

New flexible tubings from U.S. Stoneware exhibit properties suitable for use with a broad range of corrosive chemicals, oils, fuels, and solvents. U.S. Stoneware reports that recently developed FLURAN F-5000 fluoro-elastomer tubing offers good resistance to oils, fuels, lubricants, most mineral acids, and to many aliphatic and aromatic hydrocarbons such as carbon tetrachloride, toluene, benzene, and xylene. Another formulation, TYGON R-4000, has been developed specifically for pumping fuel and lubricants.

Evaluation of these new tubings in the Durrum Dial-A-Pump has established their capability for pumping liquids. Thus, to the many applications of standard TYGON and gum rubber tubings can now be added new applications opened with FLURAN F-5000 and TYGON R-4000. For information on applications and limitations of these new tubings, write U.S. Stoneware Co., Akron 9, Ohio.



REPORTED DURRUM DIAL-A-PUMP APPLICATIONS

The following applications have been reported by users of Durrum Dial-A-Pumps equipped with standard Tygon and rubber tubing. New applications made possible with the new tubings described above will greatly expand the list of useful functions thus far compiled.

Chromatography

- Peptide analysis
- multiple column chromatography
- RNA fractionation
- pumping milk through ion exchange columns for removing radioactive elements
- metering sugar solutions in chromatography
- pumping aqueous buffers
- cellulose and sephadex ion-exchange chromatography
- protein and peptide chromatography

Physiology

- perfusion in dogs and rats
- continuous infusion and withdrawal in renal physiology studies
- drawing continuous blood samples from animal preparations
- perfusion of isolated hearts
- blood chemistry monitoring
- intravenous infusion in dogs and rats

Fermentation, Toxicology, Microbiology

- continuous-flow bioassay of chlorinated hydrocarbon insecticides with fish
- mycology research
- continuous feeding and mixing in fermented beverage research
- feeding *in vitro* cultures of worm parasites
- introducing nutrient media and removing cell suspension

- pumping liquids in continuous culturing of micro-organisms
- maintaining constant flow of aqueous culture media for algae
- automated fermentation analysis
- feeding nutrients to microbiological reactors
- bacterial culture media feeding

Automated Chemistry

- continuous analytical measurements
- proportioning chemical reagents
- continuous enzyme assay
- automated colorimetric analysis
- dispensing laboratory reagents
- chemostats
- automated wet chemistry
- automation of analytical methods
- metering several solution streams in automatic analysis
- sampling and proportioning pump for continuous colorimetric analysis
- reagent pumping

Other Applications

- pumping density gradients for ultracentrifugation
- carbon research
- soil and fertilizer research
- feeding mineral cells
- pumping vaccines
- precision pumping in hydrodynamics laboratory
- feeding coagulants and industrial wastes into bench